# BioMap and Living Waters

## Guiding Land Conservation for Biodiversity in Massachusetts

# Core Habitats of Warwick

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is not intended for use in state regulations.

Produced by:

**Natural Heritage & Endangered Species Program**
**Massachusetts Division of Fisheries and Wildlife**
**Executive Office of Environmental Affairs**
**Commonwealth of Massachusetts**

Produced in 2004

# BioMap and Living Waters:
## Guiding Land Conservation for Biodiversity in Massachusetts

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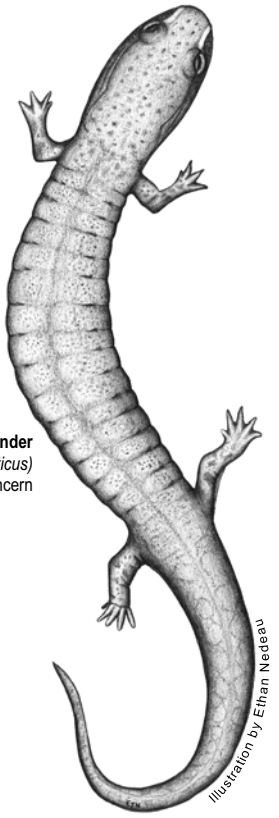
* Depending on the location of Core Habitats, your city or town may not have all of these sections.




**Spring Salamander**
*(Gyrinophilus porphyriticus)*
Species of Special Concern


*Funding for this project was made available by the Executive Office of Environmental Affairs, contributions to the Natural Heritage & Endangered Species Fund, and through the State Wildlife Grants Program of the US Fish & Wildlife Service.*



**Natural Heritage & Endangered Species Program**

**Massachusetts Division of Fisheries and Wildlife**
North Drive, Westborough, MA 01581
Tel: (508) 792-7270, Ext. 200 Fax: (508) 792-7821
http://www.nhesp.org


*For more information on rare species and natural communities, please see our fact sheets online at* ***www.nhesp.org***

# BioMap and Living Waters:
## Guiding Land Conservation for Biodiversity in Massachusetts

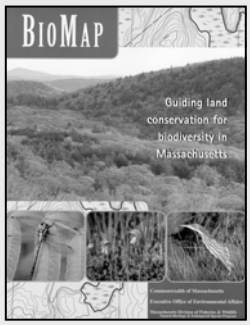
## Introduction

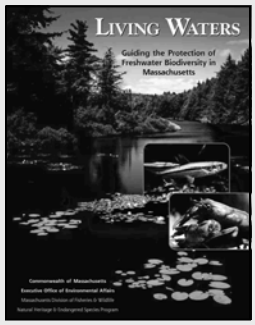
In this report, the Natural Heritage & Endangered Species Program provides you with site-specific biodiversity information for your area. Protecting our biodiversity today will help ensure the full variety of species and natural communities that comprise our native flora and fauna will persist for generatons to come.

The information in this report is the result of two statewide biodiversity conservation planning projects, ***BioMap*** and ***Living Waters***. The goal of the BioMap project, completed in 2001, was to identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts. The goal of the Living Waters project, completed in 2003, was to identify and delineate the rivers, streams, lakes, and ponds that are important for freshwater biodiversity in the Commonwealth. These two conservation plans are based on documented observations of rare species, natural communities, and exemplary habitats.

### What is a Core Habitat?

Both BioMap and Living Waters delineate ***Core Habitats*** that identify the most critical sites for biodiversity conservation across the state. Core Habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represent a wide diversity of rare species and natural communities (see Table 1), and these areas are also thought to contain virtually all of the other described species in Massachusetts. Statewide, BioMap Core Habitats encompass 1,380,000 acres of uplands and wetlands, and Living Waters identifies 429 Core Habitats in rivers, streams, lakes, and ponds.




Get your copy of the ***BioMap*** and ***Living Waters*** reports! Contact Natural Heritage at 508-792-7270, Ext. 200 or email natural.heritage@state.ma.us. Posters and detailed technical reports are also available.

### Core Habitats and Land Conservation

One of the most effective ways to protect biodiversity for future generations is to protect Core Habitats from adverse human impacts through land conservation. For Living Waters Core Habitats, protection efforts should focus on the ***riparian areas***, the areas of land adjacent to water bodies. A naturally vegetated buffer that extends 330 feet (100 meters) from the water's edge helps to maintain cooler water temperature and to maintain the nutrients, energy, and natural flow of water needed by freshwater species.

### In Support of Core Habitats

To further ensure the protection of Core Habitats and Massachusetts' biodiversity in the long-term, the BioMap and Living Waters projects identify two additional areas that help support Core Habitats.

In BioMap, areas shown as ***Supporting Natural Landscape*** provide buffers around the Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape was

**Natural Heritage & Endangered Species Program**

**Massachusetts Division of Fisheries and Wildlife**
North Drive, Westborough, MA 01581
Tel: (508) 792-7270, Ext. 200 Fax: (508) 792-7821
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generated using a Geographic Information Systems (GIS) model, and its exact boundaries are less important than the general areas that it identifies. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

In Living Waters, ***Critical Supporting Watersheds*** highlight the immediate portion of the watershed that sustains, or possibly degrades, each freshwater Core Habitat. These areas were also identified using a GIS model. Critical Supporting Watersheds represent developed and undeveloped lands, and can be quite large. Critical Supporting Watersheds can be helpful in land-use planning, and while they are not shown on these maps, they can be viewed in the Living Waters report or downloaded from www.mass.gov/mgis.

## Understanding Core Habitat Species, Community, and Habitat Lists

### What's in the List?

Included in this report is a list of the species, natural communities, and/or aquatic habitats for each Core Habitat in your city or town. The lists are organized by Core Habitat number.

For the larger Core Habitats that span more than one town, the species and community lists refer to the entire Core Habitat, not just the portion that falls within your city or town. For a list of all the state-listed rare species within your city or town's boundary, whether or not they are in Core Habitat, please see the town rare species lists available at www.nhesp.org.

The list of species and communities within a Core Habitat contains only the species and natural communities that were explicitly included in a given BioMap or Living Waters Core Habitat. Other rare species or examples of other natural communities may fall within the Core Habitat, but for various reasons are not included in the list. For instance, there are a few rare species that are omitted from the list or summary because of their particular sensitivity to the threat of collection. Likewise, the content of many very small Core Habitats are not described in this report or list, often because they contain a single location of a rare plant

**Table 1.** The number of rare species and types of natural communities explicitly included in the BioMap and Living Waters conservation plans, relative to the total number of native species statewide.

**BioMap**

| | Species and Verified Natural Community Types | |
|---|---|---|
| **Biodiversity Group** | **Included in BioMap** | **Total Statewide** |
| Vascular Plants | 246 | 1,538 |
| Birds | 21 | 221 breeding species |
| Reptiles | 11 | 25 |
| Amphibians | 6 | 21 |
| Mammals | 4 | 85 |
| Moths and Butterflies | 52 | An estimated 2,500 to 3,000 |
| Damselflies and Dragonflies | 25 | An estimated 165 |
| Beetles | 10 | An estimated 2,500 to 4,000 |
| Natural Communities | 92 | > 105 community types |

**Living Waters**

| | Species | |
|---|---|---|
| **Biodiversity Group** | **Included in Living Waters** | **Total Statewide** |
| Aquatic Vascular Plants | 23 | 114 |
| Fishes | 11 | 57 |
| Mussels | 7 | 12 |
| Aquatic Invertebrates | 23 | An estimated > 2500 |

species. Some Core Habitats were created for suites of common species, such as forest birds, which are particularly threatened by habitat fragmentation. In these cases, the individual common species are not listed.

## What does 'Status' mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations, 321 CMR 10.00. Rare species are categorized as Endangered, Threatened, or of Special Concern according to the following:

- ***Endangered*** species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- ***Threatened*** species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- ***Special Concern*** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition, the Natural Heritage & Endangered Species Program maintains an unofficial ***watch list*** of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated any laws or regulations, but they can help to identify ecologically important areas that are worthy of protection. The status of natural communities reflects the documented number and acreages of each community type in the state:

- ***Critically Imperiled*** communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- ***Imperiled*** communities typically have 6-20 sites or few remaining acres in the state.
- ***Vulnerable*** communities typically have 21-100 sites or limited acreage across the state.
- ***Secure*** communities typically have over 100 sites or abundant acreage across the state; however excellent examples are identified as Core Habitat to ensure continued protection.

**Legal Protection of Biodiversity**

BioMap and Living Waters present a powerful vision of what Massachusetts would look like with full protection of the land that supports most of our biodiversity. To create this vision, some populations of state-listed rare species were deemed more likely to survive over the long-term than others.

Regardless of their potential viability, all sites of state-listed species have full legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.37 and 10.59). The ***Massachusetts Natural Heritage Atlas*** shows **Priority Habitats**, which are used for regulation under the Massachusetts Endangered Species Act and Massachusetts Environmental Policy Act (M.G.L. c.30) and **Estimated Habitats**, which are used for regulation of rare wildlife habitat under the Wetlands Protection Act. For more information on rare species regulations, see the *Massachusetts Natural Heritage Atlas*, available from the Natural Heritage & Endangered Species Program in book and CD formats.

BioMap and Living Waters are conservation planning tools and do not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the combined BioMap and Living Waters vision is fully realized, we must continue to protect all populations of our state-listed species and their habitats through environmental regulation.

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**Massachusetts Division of Fisheries and Wildlife**
North Drive, Westborough, MA 01581
Tel: (508) 792-7270, Ext. 200 Fax: (508) 792-7821
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## Understanding Core Habitat Summaries

Following the BioMap and Living Waters Core Habitat species and community lists, there is a descriptive summary of each Core Habitat that occurs in your city or town. This summary highlights some of the outstanding characteristics of each Core Habitat, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific ***fact sheets*** at www.nhesp.org.

## Next Steps

BioMap and Living Waters were created in part to help cities and towns prioritize their land protection efforts. While there are many reasons to conserve land – drinking water protection, recreation, agriculture, aesthetics, and others – BioMap and Living Waters Core Habitats are especially helpful to municipalities seeking to protect the rare species, natural communities, and overall biodiversity within their boundaries. Please use this report and map along with the rare species and community fact sheets to appreciate and understand the biological treasures in your city or town.

### Protecting Larger Core Habitats

Core Habitats vary considerably in size. For example, the average BioMap Core Habitat is 800 acres, but Core Habitats can range from less than 10 acres to greater than 100,000 acres. These larger areas reflect the amount of land needed by some animal species for breeding, feeding, nesting, overwintering, and long-term survival. Protecting areas of this size can be very challenging, and requires developing partnerships with neighboring towns.

Prioritizing the protection of certain areas within larger Core Habitats can be accomplished through further consultation with Natural Heritage Program biologists, and through additional field research to identify the most important areas of the Core Habitat.

### Additional Information

If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program:

*by Phone* *508-792-7270, Ext. 200*

*by Fax:* *508-792-7821*

*by Email:* *natural.heritage@state.ma.us*.

*by Mail:* *North Drive*
*Westborough, MA 01581*

The GIS datalayers of BioMap and Living Waters Core Habitats are available for download from MassGIS: www.mass.gov/mgis

Check out www.nhesp.org for information on:

- Rare species in your town
- Rare species fact sheets
- BioMap and Living Waters projects
- Natural Heritage publications, including:
  - Field guides
  - Natural Heritage Atlas, and more!



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# BioMap: Species and Natural Communities

## Warwick

### Core Habitat BM97

#### Natural Communities

| Common Name | Scientific Name | Status |
|---|---|---|
| Acidic Rocky Summit/Rock Outcrop Community | | Secure |
| Black Gum Swamp | | Imperiled |
| Hemlock Ravine Community | | Secure |

### Core Habitat BM110

#### Natural Communities

| Common Name | Scientific Name | Status |
|---|---|---|
| Acidic Rock Cliff Community | | Secure |
| Circumneutral Talus Forest/Woodland | | Vulnerable |
| Northern Hardwoods - Hemlock - White Pine Forest | | Secure |
| White Pine - Oak Forest | | Secure |

#### Vertebrates

| Common Name | Scientific Name | Status |
|---|---|---|
| Four-toed Salamander | *Hemidactylium scutatum* | Special Concern |
| Wood Turtle | *Clemmys insculpta* | Special Concern |

### Core Habitat BM112

#### Natural Communities

| Common Name | Scientific Name | Status |
|---|---|---|
| Acidic Shrub Fen | | Vulnerable |

### Core Habitat BM134

#### Natural Communities

| Common Name | Scientific Name | Status |
|---|---|---|
| Acidic Shrub Fen | | Vulnerable |

| | | |
|---|---|---|
| Circumneutral Talus Forest/Woodland | | Vulnerable |
| Spruce-Fir Boreal Swamp | | Vulnerable |

### Invertebrates

| Common Name | Scientific Name | Status |
|---|---|---|
| Brook Snaketail | *Ophiogomphus aspersus* | Special Concern |

### Vertebrates

| Common Name | Scientific Name | Status |
|---|---|---|
| Four-toed Salamander | *Hemidactylium scutatum* | Special Concern |
| Jefferson Salamander | *Ambystoma jeffersonianum* | Special Concern |
| Spotted Turtle | *Clemmys guttata* | Special Concern |
| Spring Salamander | *Gyrinophilus porphyriticus* | Special Concern |
| Wood Turtle | *Clemmys insculpta* | Special Concern |

## Core Habitat BM142

### Natural Communities

| Common Name | Scientific Name | Status |
|---|---|---|
| Acidic Shrub Fen | | Vulnerable |

## Core Habitat BM172

### Natural Communities

| Common Name | Scientific Name | Status |
|---|---|---|
| Shallow Emergent Marsh | | Secure |

## Core Habitat BM177

### Natural Communities

| Common Name | Scientific Name | Status |
|---|---|---|
| Kettlehole Level Bog | | Imperiled |

# BioMap: Species and Natural Communities

## Warwick

### Core Habitat BM190

#### Natural Communities

| Common Name | Scientific Name | Status |
|---|---|---|
| Acidic Graminoid Fen | | Vulnerable |

### Core Habitat BM195

#### Natural Communities

| Common Name | Scientific Name | Status |
|---|---|---|
| Level Bog | | Vulnerable |

### Core Habitat BM227

#### Natural Communities

| Common Name | Scientific Name | Status |
|---|---|---|
| Acidic Graminoid Fen | | Vulnerable |
| Forest Seep Community | | Secure |
| Hemlock-Hardwood Swamp | | Secure |
| Kettlehole Level Bog | | Imperiled |
| Northern Hardwoods - Hemlock - White Pine Forest | | Secure |
| Shallow Emergent Marsh | | Secure |

#### Plants

| Common Name | Scientific Name | Status |
|---|---|---|
| Giant St. John's-Wort | *Hypericum ascyron* | Endangered |

#### Vertebrates

| Common Name | Scientific Name | Status |
|---|---|---|
| Four-toed Salamander | *Hemidactylium scutatum* | Special Concern |
| Jefferson Salamander | *Ambystoma jeffersonianum* | Special Concern |
| Spotted Turtle | *Clemmys guttata* | Special Concern |
| Spring Salamander | *Gyrinophilus porphyriticus* | Special Concern |

| | | |
|---|---|---|
| Wood Turtle | *Clemmys insculpta* | Special Concern |

# BioMap: Core Habitat Summaries

## Warwick

### Core Habitat BM97

#### Natural Communities

This Core Habitat contains a beautiful Black Gum Swamp with large canopy trees and very good Black Gum regeneration. Black Gum Swamps are forested acidic basin wetlands with accumulations of peat that form hummocks and hollows on the ground. Black Gum is the dominant canopy tree, growing primarily on the hummocks, which results in a relatively open canopy. Here no exotic species or human disturbances are affecting the quality of this community. A good Acidic Rocky Summit and a diverse Hemlock Ravine community occur near each other in the eastern part of this Core Habitat.

### Core Habitat BM110

This Core Habitat encompasses many miles of riparian habitats along the Tully River and its tributaries, and represents an excellent opportunity to conserve significant populations of Wood Turtles. There are also several different types of natural communities associated with Tully Mountain, as well as wet, forested areas that support Four-toed Salamanders.

#### Natural Communities

This Core Habitat contains the many natural communities of Tully Mountain. These include acidic cliffs and talus slopes surrounded by one of the largest and most mature (possibly old-growth) Northern Hardwoods-Hemlock-White Pine Forests in the state. Northern Hardwoods-Hemlock-White Pine Forests have a mix of evergreen and deciduous trees, with a closed, full canopy, and sparse shrub and herbaceous layers. They commonly occur on north facing slopes and ravines with moderately acidic soils.

#### Vertebrates

The long-term preservation of significant populations of Wood Turtles may be possible within this Core Habitat, along meandering streams, in riparian meadows and swamps, and in upland forests and fields within 600 yards of streams. Significant habitat for Four-toed Salamanders is also present, especially in wet, forested areas dominated by sphagnum moss. The American Bittern, a rare marsh bird, may use the wet meadows and shallow marsh habitats modified by beavers. There is good connectivity of stream-side habitats within this Core Habitat. Protection efforts should seek to maximize the width and connectivity of habitats adjacent to streams.

### Core Habitat BM112

#### Natural Communities

This Core Habitat contains one of the highest-quality Acidic Shrub Fens in the state. Acidic Shrub Fens are shrub-dominated acidic peatlands found primarily along pond margins in the eastern and central part of the state. These wetland communities experience some groundwater and/or surface water inputs, but no calcareous seepage. The fen here occurs on a well-developed floating mat without exotic species or human disturbances, and is embedded within a large unfragmented forested area.

# BioMap: Core Habitat Summaries

## Warwick

### Core Habitat BM134

This Core Habitat encompasses riparian habitats along a section of the Millers River and several miles of Orcutt Brook and its upper tributaries. It supports the rare Brook Snaketail dragonfly, contains a large wetland with a diversity of natural communities, and provides significant habitat for Wood Turtles and likely other rare reptiles and amphibians as well.

#### Natural Communities

The northern portion of this Core Habitat contains a large, well-buffered wetland that includes a Spruce-Fir Boreal Swamp of moderate size and quality and an Acidic Shrub Fen of considerable size, no disturbances, and excellent habitat diversity. Spruce-Fir Boreal Swamps are forested wetlands dominated by Red Spruce and Balsam Fir. These swamps are typically found at stream headwaters or in poorly drained basins. Meanwhile Acidic Shrub Fens are shrub-dominated acidic peatlands found primarily along pond margins. These wetland communities experience some groundwater and/or surface water inputs, but no calcareous seepage.

#### Invertebrates

The southern part of this Core Habitat (in Orange) includes a 2-km stretch of the Millers River, which along with its tributaries provides habitat for the rare Brook Snaketail dragonfly. Much of the surrounding landscape is undeveloped, which protects the good water quality needed by the Brook Snaketail. While some of the Brook Snaketail's habitat is within the Orange State Forest, much of it appears to be unprotected.

#### Vertebrates

This Core Habitat contains significant habitat for Wood Turtles in the wider, slower-moving streams and adjacent wetlands and uplands. Spotted Turtles have also been observed here. The brooks and cool seeps likely provide habitat for Spring Salamanders, and the forested wetlands, especially where sphagnum moss is abundant, likely provide habitat for Four-toed Salamanders. The clusters of vernal pools surrounded by mature forest may support populations of Jefferson Salamanders.

### Core Habitat BM142

#### Natural Communities

This Core Habitat contains a young, disturbance-free Acidic Shrub Fen. Acidic Shrub Fens are shrub-dominated acidic peatlands found primarily along pond margins in the eastern and central part of the state. These wetland communities experience some groundwater and/or surface water inputs, but no calcareous seepage. Here the large fen is mostly buffered by upland forest.

# BioMap: Core Habitat Summaries

## Warwick

### Core Habitat BM172

#### Natural Communities

This Core Habitat contains a Shallow Emergent Marsh with intact hydrology. The Shallow Emergent Marsh community is a graminoid wetland found in broad, flat areas bordering rivers or along pond margins. It commonly occurs in abandoned beaver ponds, and differs from Deep Emergent Marsh in having less standing water. Here the marsh is free of invasive exotic plant species and is mostly buffered by natural vegetation.

### Core Habitat BM177

#### Natural Communities

This Core Habitat contains a small Kettlehole Level Bog with structural diversity that includes areas of trees, shrubs, dwarf shrubs, and open Sphagnum. Kettlehole Level Bogs are acidic dwarf shrub peatlands with little water input or outflow that form in circular depressions left by melting iceblocks in sandy glacial outwash. The vegetation in Kettlehole Level Bogs usually grows in rings. The bog here is well-protected on the edge of a large forested area.

### Core Habitat BM190

#### Natural Communities

This Core Habitat contains a small Acidic Graminoid Fen that has a well-developed peat layer and a fair diversity of structure. Acidic Graminoid Fens are sedge and Sphagnum-dominated acidic peatlands that experience some groundwater and/or surface water flow but no calcareous seepage. Standing water is often present throughout much of the growing season. The fen here is found on the edge of a large forested area and is well-protected.

### Core Habitat BM195

#### Natural Communities

This Core Habitat contains an exceptional Level Bog in terms of its size, condition, and surrounding landscape. Level Bogs are dwarf shrub peatlands, generally with pronounced hummock and hollow formations. These wetland peatlands are our most acidic and nutrient-poor, because they receive little overland water input, and are not connected to the water table. Here the well-buffered bog is a mature and diverse peatland, free of human disturbances.

# BioMap: Core Habitat Summaries

## Warwick

### Core Habitat BM227

This Core Habitat encompasses an important wetland complex, a large tract of mature mixed deciduous and coniferous forest, and riparian habitats along many miles of Moss and Darling Brooks. It supports several rare species of turtles and salamanders, and it contains one of the state's few populations of the Endangered Giant St. John's-Wort.

#### Natural Communities

In Warwick, this Core Habitat contains a high-quality wetland complex, including a large and diverse Shallow Emergent Marsh and a small, yet well-developed, Acidic Graminoid Fen. The Shallow Emergent Marsh community is a graminoid wetland found in broad, flat areas bordering rivers or along pond margins. It commonly occurs in abandoned beaver ponds, and differs from Deep Emergent Marsh in having less standing water. Meanwhile, Acidic Graminoid Fens are sedge and Sphagnum-dominated acidic peatlands that experience some groundwater and/or surface water flow but no calcareous seepage. Standing water is often present throughout much of the growing season. Here the fen is well-buffered by a large tract of mature and disturbance-free Northern Hardwoods-Hemlock-White Pine Forest.

#### Plants

One of only three Massachusetts populations of the Endangered Giant St. John's-Wort is found within this large Core Habitat.

#### Vertebrates

This Core Habitat encompasses riparian and upland habitats along over 10 miles of small streams and brooks. The meandering, slower-moving streams with associated forested wetlands and wet meadows are inhabited by Wood and Spotted Turtles. Jefferson Salamanders use clusters of vernal pools and nearby forested uplands. Four-toed Salamanders may be present in shallow pools and seeps where sphagnum moss is abundant, and high-gradient, cold brooks may support significant populations of Spring Salamanders.

# Living Waters: Species and Habitats

## Warwick

### Core Habitat LW030

#### Exemplary Habitats

| Common Name | Scientific Name | Status |
|---|---|---|
| Lake/Pond Habitat | | ---------- |

### Core Habitat LW194

#### Invertebrates

| Common Name | Scientific Name | Status |
|---|---|---|
| Creeper | *Strophitus undulatus* | Special Concern |

### Core Habitat LW259

#### Plants

| Common Name | Scientific Name | Status |
|---|---|---|
| Algae-like Pondweed | *Potamogeton confervoides* | Threatened |

### Core Habitat LW417

#### Exemplary Habitats

| Common Name | Scientific Name | Status |
|---|---|---|
| Invertebrate Habitat | | ---------- |

# Living Waters: Core Habitat Summaries

## Warwick

### Core Habitat LW030

Hastings Pond is a deep pond surrounded by a mixed coniferous and deciduous forest that is interspersed with low density residential development. The pond supports a high diversity of aquatic plants, with no recorded invasive exotic species. The mix of nearshore and deepwater habitats likely supports a diversity of animal species as well.

### Core Habitat LW194

Orcutt Brook supports three freshwater mussel species, including the rare Creeper mussel. This species has been found in an impounded section of the brook where softer sands and gravels allow it to gain a foothold in an otherwise swiftly flowing, rocky brook. There are only nineteen Core Habitats for the Creeper mussel in the state, which represent the water bodies that support the most robust populations of this rare mussel.

### Core Habitat LW259

Laurel Lake, a naturally acidic lake, is home to a rare species of aquatic plant, the Algae-like Pondweed. This species is so named because of its filamentous and many-branched underwater leaves. Native freshwater plants like the Algae-like Pondweed are an important component of aquatic ecosystems, providing habitat and nutrition for fishes and invertebrates, and adding oxygen to the water through photosynthesis.

### Core Habitat LW417

The West Branch of the Tully River supports a healthy community of the more ecologically sensitive aquatic insects: mayflies, stoneflies, and caddisflies. The presence of this invertebrate community indicates the stream habitats here are relatively free of the impacts of development. Naturally vegetated stream banks along the Core Habitat and upstream help maintain the habitat quality, shading the water to keep it cool and controlling the runoff of sediments, excess nutrients, and water.

# Help Save Endangered Wildlife!

Please contribute on your Massachusetts income tax form or directly to the

Natural Heritage &
Endangered Species Fund

To learn more about the Natural Heritage & Endangered Species Program and the Commonwealth's rare species, visit our web site at: www.nhesp.org.